

under 37 C.F.R. § 1.136(a), and any fees required therefor (including fees for net addition of claims) are hereby authorized to be charged to our Deposit Account No. 19-0036.

Amendments

In the Claims:

Please cancel claims 1-9, 22-25, 41-45, 81-88, and 116.

Please add the following new claims:

B1 117. (New) A composition for use in reverse transcription of a nucleic acid molecule, said composition comprising two or more viral reverse transcriptases.

118. (New) The composition of claim 117, wherein said reverse transcriptases are retroviral reverse transcriptases.

Sub C2 119. (New) The composition of claim 117, wherein said reverse transcriptases are selected from the group consisting of MMLV, ASLV, RSV, AMV, RAV, MAV, and HIV reverse transcriptases.

120. (New) The composition of claim 117, wherein said reverse transcriptases comprise one or more ASLV α subunits, one or more ASLV β subunits, one or more β p4 subunits, or a combination thereof.

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121. (New) The composition of claim 117, wherein the transcription pause site of each of said reverse transcriptases is different from that of each of the other reverse transcriptase in said composition.

122. (New) The composition of claim 117, wherein at least one of said reverse transcriptases has reduced RNase H activity.

123. (New) The composition of claim 117, wherein at least one of said reverse transcriptases has substantially reduced RNase H activity.

124. (New) The composition of claim 117, wherein at least one of said reverse transcriptases lacks RNase H activity.

125. (New) The composition of any of claims 122-124, wherein at least one of said reverse transcriptase is selected from the group consisting of MMLV, ASLV, RSV, AMV, RAV, MAV, and HIV reverse transcriptases.

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126. (New) The composition of any one of claims 122-124, wherein at least one of said reverse transcriptase comprises one or more ASLV α subunits, one or more β subunits, one or more $\beta p4$ subunits, or a combination thereof.

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127. (New) The composition of claim 117, wherein at least one of said reverse transcriptases is a mutant or fragment reverse transcriptase that has reduced RNase H activity.

128. (New) The composition of claim 117, wherein at least one of said reverse transcriptases is a mutant or fragment reverse transcriptase that has substantially reduced RNase H activity.

129. (New) The composition of claim 117, wherein at least one of said reverse transcriptases is a mutant or fragment reverse transcriptase that lacks RNase H activity.

130. (New) The composition of claim 117, wherein said reverse transcriptases are present in said composition at working concentrations.

131. (New) A kit for use in reverse transcription of a nucleic acid molecule, said kit comprising two or more viral reverse transcriptases.

132. (New) The kit of claim 131, wherein said reverse transcriptases are retroviral reverse transcriptases.

133. (New) The kit of claim 131, wherein said reverse transcriptases are selected from the group consisting of MMLV, ASLV, RSV, AMV, RAV, MAV, and HIV reverse transcriptases.

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134. (New) The kit of claim 131, wherein said reverse transcriptases comprise one or more ASLV α subunits, one or more β subunits, one or more β p4 subunits, or a combination thereof.

135. (New) The kit of claim 131, wherein the transcription pause site of each of said reverse transcriptases is different from that of each of the other reverse transcriptase in said composition.

136. (New) The kit of claim 131, wherein at least one of said reverse transcriptases has reduced RNase H activity.

137. (New) The kit of claim 131, wherein at least one of said reverse transcriptases has substantially reduced RNase H activity.

138. (New) The kit of claim 131, wherein at least one of said reverse transcriptases lacks RNase H activity.

139. (New) The kit of any one of claims 136-138, wherein at least one of said reverse transcriptases is selected from the group consisting of MMLV, ASLV, RSV, AMV, RAV, MAV, and HIV reverse transcriptases.

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140. (New) The kit of any one of claims 136-138, wherein at least one of said reverse transcriptases comprises one or more ASLV α subunits, one or more β subunits, one or more β p4 subunits, or a combination thereof.

141. (New) The kit of claim 131, wherein at least one of said reverse transcriptases is a mutant or fragment reverse transcriptase that has reduced RNase H activity.

142. (New) The kit of claim 131, wherein at least one of said reverse transcriptases is a mutant or fragment reverse transcriptase that has substantially reduced RNase H activity.

143. (New) The kit of claim 131, wherein at least one of said reverse transcriptases is a mutant or fragment reverse transcriptase that lacks RNase H activity.

144. (New) The kit of claim 131, wherein said reverse transcriptases are present in said kit at working concentrations.

145. (New) The kit of claim 131, said kit further comprising one or more components selected from the group consisting of one or more nucleotides, one or more DNA polymerases, a suitable buffer, one or more primers and one or more terminating agents.

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146. (New) The kit of claim 145, wherein said terminating agent is a dideoxynucleotide.

147. (New) The kit of claim 145, wherein two or more of the components of said kit are present as a mixture or are present as separate components.

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148. (New) An ASLV reverse transcriptase, wherein said ASLV reverse transcriptase has a specific activity of at least about 30,000 units per milligram.

149. (New) The ASLV reverse transcriptase of claim 148, wherein said ASLV reverse transcriptase is a RSV reverse transcriptase.

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150. (New) The ASLV reverse transcriptase of claim 148, wherein said ASLV reverse transcriptase comprises one or more ASLV α subunits, one or more β subunits, one or more $\beta p4$ subunits, or a combination thereof.

151. (New) The ASLV reverse transcriptase of claim 148, wherein said ASLV reverse transcriptase has a specific activity of about 30,000 units per milligram to about 150,000 units per milligram.

152. (New) The ASLV reverse transcriptase of claim 148, wherein said ASLV reverse transcriptase has a specific activity of about 40,000 units per milligram to about 150,000 units per milligram.

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153. (New) The ASLV reverse transcriptase of claim 148, wherein said ASLV reverse transcriptase has a specific activity of about 50,000 units per milligram to about 150,000 units per milligram.

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154. (New) The ASLV reverse transcriptase of claim 148, wherein said ASLV reverse transcriptase has a specific activity of about 75,000 units per milligram to about 150,000 units per milligram.

155. (New) The ASLV reverse transcriptase of claim 148, wherein said ASLV reverse transcriptase is present in a kit or composition at working concentrations.

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156. (New) A composition comprising an ASLV reverse transcriptase, wherein said ASLV reverse transcriptase has a specific activity of at least about 30,000 units per milligram.

157. (New) The composition of claim 156, wherein said ASLV reverse transcriptase is a RSV reverse transcriptase.

158. (New) The composition of claim 156, wherein said ASLV reverse transcriptase comprises one or more ASLV α subunits, one or more β subunits, one or more $\beta p4$ subunits, or a combination thereof.

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159. (New) The composition of claim 156, wherein said ASLV reverse transcriptase has a specific activity of about 30,000 units per milligram to about 150,000 units per milligram.

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160. (New) The composition of claim 156, wherein said ASLV reverse transcriptase has a specific activity of about 40,000 units per milligram to about 150,000 units per milligram.

161. (New) The composition of claim 156, wherein said ASLV reverse transcriptase has a specific activity of about 50,000 units per milligram to about 150,000 units per milligram.

162. (New) The composition of claim 156, wherein said ASLV reverse transcriptase has a specific activity of about 75,000 units per milligram to about 150,000 units per milligram.

163. (New) The composition of claim 156, wherein said ASLV reverse transcriptase is present in said composition at working concentrations.

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164. (New) A kit comprising an ASLV reverse transcriptase, wherein said ASLV reverse transcriptase has a specific activity of at least about 30,000 units per milligram.

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165. (New) The kit of claim 164, wherein said ASLV reverse transcriptase is a RSV reverse transcriptase.

166. (New) The kit of claim 164, wherein said ASLV reverse transcriptase comprises one or more ASLV α subunits, one or more β subunits, one or more $\beta p4$ subunits, or a combination thereof.

167. (New) The kit of claim 164, wherein said ASLV reverse transcriptase has a specific activity of about 30,000 units per milligram to about 150,000 units per milligram.

168. (New) The kit of claim 164, wherein said ASLV reverse transcriptase has a specific activity of about 40,000 units per milligram to about 150,000 units per milligram.

169. (New) The kit of claim 164, wherein said ASLV reverse transcriptase has a specific activity of about 50,000 units per milligram to about 150,000 units per milligram.

170. (New) The kit of claim 164, wherein said ASLV reverse transcriptase has a specific activity of about 75,000 units per milligram to about 150,000 units per milligram.

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171. (New) The kit of claim 164, wherein said ASLV reverse transcriptase is present in said kit at working concentrations.

172. (New) The kit of claim 164, said kit further comprising one or more components selected from the group consisting of one or more nucleotides, one or more DNA polymerases, a suitable buffer, one or more primers and one or more terminating agents.

173. (New) The kit of claim 172, wherein said terminating agent is a dideoxynucleotide.

174. (New) The kit of claim 172, wherein two or more of the components of said kit are present as a mixture or are present as separate components.

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175. (New) An ASLV reverse transcriptase produced by a method comprising

- (a) obtaining a host cell comprising one or more nucleic acid sequences encoding at least one ASLV reverse transcriptase; and
- (b) culturing said host cell under conditions sufficient to produce said ASLV reverse transcriptase; and
- (c) wherein said ASLV reverse transcriptase has a specific activity of at least about 30,000 units per milligram.

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176. (New) The ASLV reverse transcriptase of claim 175, wherein said ASLV reverse transcriptase is a RSV reverse ranscriptase.

177. (New) The ASLV reverse transcriptase of claim 175, wherein said ASLV reverse transcriptase comprises one or more ASLV α subunits, one or more β subunits, one or more $\beta p4$ subunits, or a combination thereof.

178. (New) The ASLV reverse transcriptase of claim 175, wherein said ASLV reverse transcriptase has a specific activity of about 30,000 units per milligram to about 150,000 units per milligram.

179. (New) The ASLV reverse transcriptase of claim 175, wherein said ASLV reverse transcriptase has a specific activity of about 40,000 units per milligram to about 150,000 units per milligram.

180. (New) The ASLV reverse transcriptase of claim 175, wherein said ASLV reverse transcriptase has a specific activity of about 50,000 units per milligram to about 150,000 units per milligram.

181. (New) The ASLV reverse transcriptase of claim 175, wherein said ASLV reverse transcriptase has a specific activity of about 75,000 units per milligram to about 150,000 units per milligram.

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182. (New) The ASLV reverse transcriptase of claim 175, wherein said ASLV reverse transcriptase is present in a kit or composition at working concentrations.

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183. (New) An AMV reverse transcriptase, wherein said AMV reverse transcriptase has a specific activity of at least about 30,000 units per milligram.

184. (New) The AMV reverse transcriptase of claim 183, wherein said AMV reverse transcriptase comprises one or more AMV α subunits, one or more β subunits, one or more $\beta p4$ subunits, or a combination thereof.

185. (New) The AMV reverse transcriptase of claim 183, wherein said AMV reverse transcriptase has a specific activity of about 30,000 units per milligram to about 150,000 units per milligram.

186. (New) The AMV reverse transcriptase of claim 183, wherein said AMV reverse transcriptase has a specific activity of about 40,000 units per milligram to about 150,000 units per milligram.

187. (New) The AMV reverse transcriptase of claim 183, wherein said AMV reverse transcriptase has a specific activity of about 50,000 units per milligram to about 150,000 units per milligram.

188. (New) The AMV reverse transcriptase of claim 183, wherein said AMV

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189. (New) The AMV reverse transcriptase of claim 183, wherein said AMV reverse transcriptase is present in a kit or composition at working concentrations.

July 15 190. (New) A composition comprising an AMV reverse transcriptase, wherein said AMV reverse transcriptase has a specific activity of at least about 30,000 units per milligram.

191. (New) The composition of claim 190, wherein said AMV reverse transcriptase comprises one or more AMV α subunits, one or more β subunits, one or more $\beta p4$ subunits, or a combination thereof.

192. (New) The composition of claim 190, wherein said AMV reverse transcriptase has a specific activity of about 30,000 units per milligram to about 150,000 units per milligram.

193. (New) The composition of claim 190, wherein said AMV reverse transcriptase has a specific activity of about 40,000 units per milligram to about 150,000 units per milligram.

194. (New) The composition of claim 190, wherein said AMV reverse

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transcriptase has a specific activity of about 50,000 units per milligram to about 150,000 units per milligram.

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195. (New) The composition of claim 190, wherein said AMV reverse transcriptase has a specific activity of about 75,000 units per milligram to about 150,000 units per milligram.

196. (New) The composition of claim 190, wherein said AMV reverse transcriptase is present in said composition at working concentrations.

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197. (New) A kit comprising an AMV reverse transcriptase, wherein said AMV reverse transcriptase has a specific activity of at least about 30,000 units per milligram.

198. (New) The kit of claim 197, wherein said AMV reverse transcriptase comprises one or more AMV α subunits, one or more β subunits, one or more $\beta p4$ subunits, or a combination thereof.

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199. (New) The kit of claim 197, wherein said AMV reverse transcriptase has a specific activity of about 30,000 units per milligram to about 150,000 units per milligram.

200. (New) The kit of claim 197, wherein said AMV reverse transcriptase has a

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specific activity of about 40,000 units per milligram to about 150,000 units per milligram.

201. (New) The kit of claim 197, wherein said AMV reverse transcriptase has a specific activity of about 50,000 units per milligram to about 150,000 units per milligram.

202. (New) The kit of claim 197, wherein said AMV reverse transcriptase has a specific activity of about 75,000 units per milligram to about 150,000 units per milligram.

203. (New) The kit of claim 197, wherein said AMV reverse transcriptase is present in said kit at working concentrations.

204. (New) The kit of claim 197, said kit further comprising one or more components selected from the group consisting of one or more nucleotides, one or more DNA polymerases, a suitable buffer, one or more primers and one or more terminating agents.

205. (New) The kit of claim 197, wherein said terminating agent is a dideoxynucleotide.

206. (New) The kit of claim 197, wherein two or more of the components of

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B1 said kit are present as a mixture or are present as separate components.

207. (New) An AMV reverse transcriptase produced by a method comprising

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- (a) obtaining a host cell comprising one or more nucleic acid sequences encoding at least one AMV reverse transcriptase; and
 - (b) culturing said host cell under conditions sufficient to produce said AMV reverse transcriptase; and
 - (c) wherein said AMV reverse transcriptase has a specific activity of at least about 30,000 units per milligram.

208. (New) The AMV reverse transcriptase of claim 207, wherein said AMV reverse transcriptase comprises one or more AMV α subunits, one or more β subunits, one or more $\beta p4$ subunits, or a combination thereof.

209. (New) The AMV reverse transcriptase of claim 207, wherein said AMV reverse transcriptase has a specific activity of about 30,000 units per milligram to about 150,000 units per milligram.

210. (New) The AMV reverse transcriptase of claim 207, wherein said AMV reverse transcriptase has a specific activity of about 40,000 units per milligram to about 150,000 units per milligram.

211. (New) The AMV reverse transcriptase of claim 207, wherein said AMV

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reverse transcriptase has a specific activity of about 50,000 units per milligram to about 150,000 units per milligram.

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212. (New) The AMV reverse transcriptase of claim 207, wherein said AMV reverse transcriptase has a specific activity of about 75,000 units per milligram to about 150,000 units per milligram.

213. (New) The AMV reverse transcriptase of claim 207, wherein said AMV reverse transcriptase is present in a kit or composition at working concentrations.

Concluded